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10/558,621	11/28/2005	Hubert Moriceau	280759US0PCT	6732
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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER ISAAC, STANETTA D				
ART UNIT		PAPER NUMBER		
2812				
NOTIFICATION DATE		DELIVERY MODE		
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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# Office Action Summary

## Application No.

10/558,621

## Applicant(s)

MORICEAU ET AL.

## Examiner

STANETTA D. ISAAC

## Art Unit

2812

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 11-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/5508)
- Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This Office Action is in response to the amendment filed on 4/10/08. Currently, claims 11-30 are pending.

#### ***Allowable Subject Matter***

The indicated allowability of claims 14-18 are withdrawn in view of the newly discovered reference(s) to fracturing between the thick layer of the first material and a remainder of the initial substrate. Rejections based on the newly cited reference(s) follow.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 11-30 rejected under 35 U.S.C. 102(e) as being anticipated by Ghyselen et al (US Patent 7,115,481, hereinafter referred to as "Ghyselen")

The applied reference has a common Assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome

either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Ghyselen discloses the semiconductor method substantially as claimed. See figures 1A-5F, and corresponding text, where Ghyselen teaches pertaining to claim 11, a process for obtaining a thin layer made of a first material on a substrate made of a second material called a final substrate, the process comprising, in the order as hereinafter set forth: bonding a thick layer **11** of a first material by one of its main faces on the final substrate **2** at an interface followed by implanting gaseous species in the thick layer of the first material to create a weakened zone **6** followed by bonding said thick layer of said first material by one of its main faces on the final substrate at an interface thereby delimiting said thin layer **120** between the interface and the weakened zone (figures 3A-3B; col. 5, lines 59-67; col. 6, lines 1-11); depositing a layer of a third material **110** to form a self-supporting layer on a free face **130** of the thick layer made of the first material (figure 3B; col. 6, lines 3-11); and fracturing the structure comprising the final substrate, the thick layer of the first material and the layer of the third material, at the weakened zone to supply the substrate supporting said thin layer (figure 3C; col. 6, lines 6-24).

Ghyselen teaches, pertaining to claim 12, wherein implanting gaseous species further comprises implanting one or more identical or different gaseous species (col. 5, lines 64-65).

Ghyselen teaches, pertaining to claim 13, wherein said gaseous species is selected from the group consisting of hydrogen and helium (col. 4, lines 42-46).

Ghyselen teaches pertaining to claim 14, a process for obtaining a thin layer made of a first material on a substrate made of a second material called a final substrate, the process comprising, in the order as hereinafter set forth: bonding a thick layer **11** of a first material by one of its main faces on the final substrate **2** at an interface followed by implanting gaseous species in the thick layer of the first material to create a weakened zone **6** followed by bonding said thick layer of said first material by one of its main faces on the final substrate at an interface thereby delimiting said thin layer between the interface and the weakened zone (figure 3A-3B; col. 5, lines 59-67; col. 6, lines 1-11); depositing a layer of a third material **110** to form a self-supporting layer on a free face **130** of the thick layer made of the first material (figure 3B; col. 6, lines 3-11); and fracturing the structure comprising the final substrate, the thick layer of the first material and the layer of the third material, at the weakened zone to supply the substrate supporting said thin layer (figure 3C; col. 6, lines 6-24), wherein the thick layer of the first material is a layer delimited in an initial substrate, and further comprising fracturing between the thick layer of the first material and a remainder of the initial substrate, which is performed after bonding the thick layer of the first material onto the first final substrate (figures 3D-3F; col. 6, lines 25-51).

Ghyselen teaches, pertaining to claim 15, wherein implanting gaseous species in the initial substrate further comprises implanting hydrogen ions (col. 4, lines 42-46).

Ghyselen teaches, pertaining to claim 16, wherein implanting gaseous species in the thick layer of the first material is performed after fracturing between the thick layer of the first material and a remainder of the initial substrate (figures 3D-3F).

Ghyselen teaches, pertaining to claim 17, wherein implanting gaseous species in the thick layer of the first material is performed before bonding the thick layer of the first material on the final substrate (figure 3A).

Ghyselen teaches, pertaining to claim 18, wherein fracturing is performed by a heat treatment, wherein implanting gaseous species is performed under conditions so that the fracturing between the thick layer of the first material and a remainder of the initial substrate is obtained at a temperature less than the fracture temperature of the said structure (col. 5, lines 7-9).

Ghyselen teaches, pertaining to claim 19, wherein the thick layer of the first material is bonded onto the final substrate by molecular bonding (col. 6, lines 3-6).

Ghyselen teaches, pertaining to claim 20, wherein a part of the self-supporting layer is deposited, and the gaseous species are implanted in the thick layer of the first material after the partial deposit (figures 3A-3F).

Ghyselen teaches, pertaining to claim 21, wherein said thin layer has a thickness less than 0.1  $\mu\text{m}$  (col. 8, lines 29-47).

Ghyselen teaches, pertaining to claim 22, wherein said thin layer has a thickness less than 0.1  $\mu\text{m}$  (col. 8, lines 29-47).

Ghyselen teaches, pertaining to claim 23, comprising, in the order as hereinafter set forth: bonding a thick layer 11 of a first material by one of its main faces on the final

substrate **2** at an interface followed by implanting gaseous species in the thick layer of the first material to create a weakened zone **6** delimiting said thin layer between the interface and the weakened zone (figure 3A); depositing a layer of a third material **110** to form a self-supporting layer on a free face **130** of the thick layer made of the first material (figure 3B; col. 6, lines 3-11); and fracturing the structure comprising the final substrate, the thick layer of the first material and the layer of the third material at the weakened zone to supply the substrate supporting said thin layer (figure 3C; col. 6, lines 6-24).

Ghyselen teaches, pertaining to claim 24, wherein implanting gaseous species are further comprises implanting one or more identical or different gaseous species (col. 5, lines 64-65).

Ghyselen teaches, pertaining to claim 25, wherein said gaseous species are selected from group consisting of hydrogen and helium (col. 4, lines 42-46).

Ghyselen, teaches, pertaining to claim 26, comprising, in the order as hereinafter set forth: implanting gaseous species in a thick layer of a first material to create a weakened zone **6** followed by bonding said thick layer of said first material by one of its main faces on the final substrate at an interface thereby delimiting said thin layer between the interface and the weakened zone (figures 3A-3B; col. 5, lines 59-67; col. 6, lines 1-11); depositing a layer of a third material **110** to form a self-supporting layer on a free face **130** of the thick layer made of the first material (figure 3B; col. 6, lines 3-11); and fracturing the structure comprising the final' substrate, the thick layer of the first

material and the layer of the third material at the weakened zone to supply the substrate supporting said thin layer (figure 3C; col. 6, lines 6-24).

Ghyselen teaches, pertaining to claim 27, wherein implanting gaseous species further comprises implanting one or more identical or different gaseous species (col. 5, lines 64-65).

Ghyselen teaches, pertaining to claim 28, wherein said gaseous species area selected from the group consisting of hydrogen and helium (col. 4, lines 42-46).

Ghyselen teaches, pertaining to claim 29, consisting of, in the order as hereinafter set forth: bonding a thick layer **11** of a first material by one of its main faces on the final substrate at an interface followed by implanting gaseous species in the thick layer of the first material to create a weakened zone delimiting said thin layer between the interface and the weakened zone (figures 3A-3B; col. 5, lines 59-67; col. 6, lines 1-11); depositing a layer of the third material **110** to form a self-supporting layer on a free face **130** of the thick layer made of the first material (figure 3B; col. 6, lines 3-11); and fracturing the structure comprising the final substrate, the thick layer of the first material and the layer of the third material at the weakened zone to supply the substrate said thin layer (figure 3C; col. 6, lines 6-24).

Ghyselen teaches, pertaining to claim 30, consisting of, in the order as hereinafter set forth: implanting gaseous species in a thick layer of a first material to create a weakened zone followed by bonding said thick layer of said first material by one of its main faces on the final substrate at an interface thereby delimiting said thin layer between the interface and the weakened zone (figure 3A-3B; col. 5, lines 59-67;



col. 6, lines 1-11); depositing a layer of a third material **110** to form a self-supporting layer on a free face **130** of the thick layer made of the first material (figure 3B; col. 6, lines 3-11); and fracturing the structure comprising the final substrate, the thick layer of the first material and the layer of the third material at the weakened zone to supply the substrate supporting said thin layer (figure 3C; col. 6, lines 6-24).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STANETTA D. ISAAC whose telephone number is (571)272-1671. The examiner can normally be reached on Monday-Friday 9:30am - 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Garber can be reached on 571-272-2194. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2812

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Stanetta Isaac  
Patent Examiner  
August 4, 2008

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